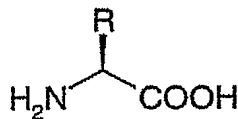


Patent claims:

1. A process for preparing enantiomerically enriched L- α -amino acids or their salts by reacting the corresponding 2-ketocarboxylic acid with an ammonium ion donor in the presence of a whole-cell catalyst which comprises a cloned gene encoding a cofactor-dependent amino acid dehydrogenase and a cloned gene encoding an enzyme which regenerates the cofactor, at a total input of substrate per reaction volume of ≥ 500 mM, with the addition of the substrate being metered such that the stationary concentration of 2-ketocarboxylic acid is less than 500 mM and the external addition of cofactor, based on the total input of substrate, corresponds to < 0.0001 equivalents.
2. The process as claimed in claim 1, characterized in that no cofactor is added to the reaction mixture.
3. The process as claimed in claim 1 and/or 2, characterized in that use is made of 2-ketocarboxylic acids which yield amino acids of the general formula (I)



(I)

in which R is alkyl, in particular a space-filling branched alkyl group which exhibits a tertiary C atom and possesses 5-10 C atoms, for example tert-butyl, and substituted alkyls.

4. The process as claimed in one or more of the preceding claims,
characterized in that
the substrate is metered in in accordance with a
5 fed batch process.
5. The process as claimed in one or more of the preceding claims,
characterized in that
10 the 2-ketocarboxylic acid is kept at a maximum stationary concentration of less than 450 mM, very preferably of less than 400 mM.
6. The process as claimed in one or more of the preceding claims,
15 characterized in that
before it is used, the whole-cell catalyst is pretreated such that the permeability of the cell membrane for the substrate and products is
20 increased as compared with the intact system.